--ABSTRACT OF THE DISCLOSURE

A sensor having a housing; conductive elements; a resilient dome-cap, and a depressible actuator retained by the housing with a portion thereof exposed to be accessible for depressive force to be applied thereto by a human finger/thumb. The actuator also includes a portion positioned to allow depressive force applied thereto to be applied to the dome-cap. Pressure-sensitive variable-conductance material is contained within the housing and electrically positioned as a variably conductive element in a current flow path between the conductive elements. Depressing the actuator causes the dome-cap to bow downward, causing a user first discernable tactile sensation indicating actuation of the sensor, and transferring force through the dome-cap into the variable-conductance material for providing variable electrical flow between the conductive elements dependant upon the applied pressure. The resilient dome-cap returns to a raised position providing a second discernable feedback.--

AMENDMENTS TO THE CLAIMS

Please cancel claims 1-7.

Please insert claims 8-24 presented for examination and Allowance.

8. A pressure-sensitive variable-conductance analog sensor with tactile feedback actuatable by a human thumb or finger, comprising;

a human thumb or finger;

a housing;

conductive elements at least in-part within said housing;

a depressible actuator retained by said housing and in-part exposed external to said housing for depression by a human thumb or finger for depressing said actuator and receiving tactile

feedback to the thumb or finger from said actuator;

a resilient snap-through dome-cap positioned within said housing and depressible with force from said actuator applied to said dome-cap to cause said dome-cap to snap-through and create the tactile feedback detectable by the thumb or finger depressing the actuator; and

pressure-sensitive variable-conductance material within said housing and positioned as a variably conductive element electrically between said conductive elements, and further positioned for receiving force applied to said dome-cap, whereby electrical conductivity of said pressure-sensitive variable-conductance material is altered relative to received force and electrical output of said sensor with tactile feedback is variable.

9. A pressure-sensitive variable-conductance analog sensor with tactile feedback in accordance with claim 8 wherein said conductive elements are of high and relatively constant conductivity.

10. A pressure-sensitive variable-conductance analog sensor with tactile feedback in accordance with claim 8 wherein said pressure-sensitive variable-conductance material is variable in terms of electrical resistivity, the electrical resistivity of said pressure-sensitive variable-conductance material lowering with received force thereon.

11. A pressure-sensitive variable-conductance analog sensor with tactile feedback in accordance with claim 10 wherein said housing is formed of plastics.

12. An improved pressure-sensitive variable-conductance analog sensor of the type having at least two electrically conductive elements operationally connected to pressure-sensitive variable-conductance material; a depressible actuator retained

relative to said pressure-sensitive variable-conductance material; said actuator in-part exposed to be depressible toward said pressure-sensitive variable-conductance material for transferring force into said pressure-sensitive variable-conductance material;

wherein the improvement comprises:

a resilient snap-through dome-cap positioned to provide tactile feedback into said actuator and to a human user's thumb or finger depressing said actuator.

13. An improved pressure-sensitive variable-conductance analog sensor in accordance with claim 12 wherein said snap-through dome-cap is positioned between said actuator and said pressure-sensitive variable-conductance material.

14. An analog output sensor, comprising;

a single human thumb or finger positioned for actuating

a tactile element, when actuated said tactile element creating a tactile feedback detectable by the single thumb or finger, said tactile element positioned for actuating

pressure-sensitive variable-conductance material for creating varying electrical output representing varying force input by said single human thumb or finger.

15. An analog output sensor according to claim 14 wherein, when deactuated said tactile element creating a tactile feedback detectable by the single thumb or finger.

16. An analog output sensor, comprising;

a single human thumb/finger positioned for depressing

a tactile element, when depressed said tactile element creating a tactile feedback detectable by the single thumb/finger, said tactile element operationally associated with

analog sensor material for creating varying electrical output representing varying force input by said single human

thumb/finger.

17. An analog output sensor according to claim 16 wherein, when released said tactile element creating a tactile feedback detectable by said single human thumb/finger.

18. An analog output sensor, comprising;

a tactile element, positioned to be depressed by only a

a single human thumb or finger, said tactile element when depressed creating

a tactile feedback detectable by said single human thumb or finger, said tactile element operationally associated with

analog sensor material for creating varying electrical output representing varying force input by said single human thumb or finger.

19. An analog output sensor according to claim 18 further including an actuator positioned between said single human thumb or finger and said tactile element.

20. A method of manufacturing a pressure-sensitive analog variable-conductance sensor, comprising the steps of:

forming conductive elements;

locating pressure-sensitive variable-conductance material positioned as a variably conductive element electrically between said conductive elements;

positioning an actuator for transferring force applied by a human thumb or finger onto said pressure-sensitive analog variable-conductance material;

positioning a resilient tactile feedback dome-cap operationally associated with said pressure-sensitive variable-conductance material;

positioning said dome-cap relative to said variable-conductance material and said actuator so that the tactile feedback produced by said dome-cap is detactable by a thumb or

finger on said actuator approximately simultaneously when output of said sensor is varied by an increase in pressure against said pressure-sensitive variable-conductance material.

21. A method of controlling variable output of a variable output sensor, comprising

pressing an actuator with force, using a human finger or thumb, to receive a first tactile feedback to the finger or thumb pressing the actuator,

then,

varying the pressing force for varying the output of the sensor,

followed by

reducing the pressing force until a second tactile feedback is received by the finger or thumb.

22. A method of controlling variable output of a variable output sensor according to claim 21 further including

increasing the pressing force, following the receiving of said second tactile feedback, to receive another tactile feedback and to vary the output of the sensor with further increasing pressing force.

23. A method of controlling a variable output sensor, comprising

pressing an actuator with force, using a thumb or a finger, to receive a first tactile feedback to the thumb or finger pressing the actuator, and using the first tactile feedback as indication of output of the sensor beginning to be varied,

then,

increasing the pressing force for further varying the output of the sensor,

followed by

reducing the pressing force until a second tactile feedback is received by the thumb or finger pressing the actuator, and